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In re AGARWAL ET AL., Application No. 10/791,632
Amendment A

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method for identifying a combined ordering of masks corresponding to a plurality of access control lists (ACLs), the plurality of ACLs including n ACLs, with n being an integer greater than one, the method comprising:

identifying a required ordering of masks for each of the plurality of ACLs;

generating an n -dimensional array wherein each axis of the n -dimensional array corresponds to masks in their said requisite order of a different one of the plurality of ACLs, the n -dimensional array progressively identifying numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs; and

traversing the n -dimensional array to identify a sequence of masks corresponding to a single ordering of masks including masks required for each of the plurality of ACLs, wherein the single ordering of masks maintains the ordering of masks required for each of the plurality of ACLs with one or more masks corresponding to a different ACL or other feature in between one or more consecutive masks of an ACL of the plurality of ACLs.

Claim 2 (original): The method of claim 1, wherein a last position identified by a last column and last row of the array identifies the number of different masks required for the single ordering of masks.

Claim 3 (original): The method of claim 1, wherein the n -dimensional array is traversed based on said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs.

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Claim 4 (original): The method of claim 1, wherein said generating the n -dimensional array includes maintaining indications from where said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs are generated; and wherein the n -dimensional array is traversed based on said indications from where said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs are generated.

Claim 5 (original): The method of claim 1, comprising populating a plurality of block masks of an associative memory with said masks required for the plurality of ACLs such that the single ordering of masks is produced in the associative memory.

Claim 6 (currently amended): ~~A computer-readable medium containing computer-executable instructions for performing~~ An apparatus comprising one or more processors and a memory, wherein the memory stores one or more instructions that, when executed by the one or more processors, perform steps for identifying a combined ordering of masks corresponding to a plurality of access control lists (ACLs), the plurality of ACLs including n ACLs, with n being an integer greater than one, said steps comprising:

identifying a required ordering of masks for each of the plurality of ACLs;

generating an n -dimensional array wherein each axis of the n -dimensional array corresponds to masks in their said requisite order of a different one of the plurality of ACLs, the n -dimensional array progressively identifying numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs; and

traversing the n -dimensional array to identify a sequence of masks corresponding to a single ordering of masks including masks required for each of the plurality of ACLs, wherein the single ordering of masks maintains the ordering of masks required for each of the plurality of ACLs with one or more masks corresponding to a different ACL or other feature in between one or more consecutive masks of an ACL of the plurality of ACLs.

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Claim 7 (currently amended): ~~The computer-readable medium~~

The apparatus of claim 6, wherein a last position identified by a last column and last row of the array identifies the number of different masks required for the single ordering of masks.

Claim 8 (currently amended): ~~The computer-readable medium~~

The apparatus of claim 6, wherein the n -dimensional array is traversed based on said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs.

Claim 9 (currently amended): ~~The computer-readable medium~~

The apparatus of claim 6, wherein said generating the n -dimensional array includes maintaining indications from where said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs are generated; and wherein the n -dimensional array is traversed based on said indications from where said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs are generated.

Claim 10 (currently amended): ~~The computer-readable medium~~

The apparatus of claim 6, wherein said steps comprise ~~comprising~~ populating a plurality of block masks of an associative memory with said masks required for the plurality of ACLs such that the single ordering of masks is produced in the associative memory.

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Claim 11 (currently amended): An apparatus for identifying a combined ordering of masks corresponding to a plurality of access control lists (ACLs), the plurality of ACLs including n ACLs, with n being an integer greater than one, the method comprising:

means for generating an n -dimensional array wherein each axis of the n -dimensional array corresponds to masks in a required ordering for a different one of the plurality of ACLs with , the n -dimensional array progressively identifying numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs; and

means for traversing the n -dimensional array to identify a sequence of masks corresponding to a single ordering of masks including masks required for each of the plurality of ACLs, wherein the single ordering of masks maintains the ordering of masks required for each of the plurality of ACLs with one or more masks corresponding to a different ACL or other feature in between one or more consecutive masks of an ACL of the plurality of ACLs.

Claim 12 (original): The apparatus of claim 11, wherein a last position identified by a last column and last row of the array identifies the number of different masks required for the single ordering of masks.

Claim 13 (original): The apparatus of claim 11, wherein said means for traversing the n -dimensional array includes means for traversing the n -dimensional array based on said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs.

Claim 14 (original): The apparatus of claim 11, wherein said means for generating the n -dimensional array includes means for maintaining indications from where said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs are generated; and wherein said means for traversing the n -dimensional array includes means for traversing the n -dimensional array based on said indications from where said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs are generated.

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Claim 15 (original): The apparatus of claim 11, comprising means for populating a plurality of block masks of an associative memory with said masks required for the plurality of ACLs such that the single ordering of masks is produced in the associative memory.

Claim 16 (original): A method for identifying a combined ordering of masks corresponding to a first access control list (ACL) and a second ACL, the method comprising:
identifying a first ordering of masks required for the first ACL;
identifying a second ordering of masks required the second ACL;
generating a matrix of the first and second orderings of masks, the matrix progressively identifying numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs; and

traversing the matrix to identify a sequence of masks corresponding to a single ordering of masks including masks required for the first ACL and the second ACL, wherein the single ordering of masks maintains the first ordering and second orderings of masks with one or more masks corresponding to a different ACL or other feature in between one or more consecutive masks of the first and second ACLs.

Claim 17 (original): The method of claim 16, wherein a last position identified by a last column and last row of the matrix identifies the number of different masks required for the single ordering of masks.

Claim 18 (original): The method of claim 16, wherein the matrix is traversed based on said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs.

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Claim 19 (original): The method of claim 16, wherein said generating the matrix includes maintaining indications from where said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs are generated; and wherein the matrix is traversed based on said indications from where said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs are generated.

Claim 20 (original): The method of claim 16, comprising populating a plurality of block masks of an associative memory with said masks required for the first and second ACLs such that the single ordering of masks is produced in the associative memory.

Claim 21 (currently amended): ~~A computer-readable medium containing computer-executable instructions for performing~~ An apparatus comprising one or more processors and a memory, wherein the memory stores one or more instructions that, when executed by the one or more processors, perform steps for identifying a combined ordering of masks corresponding to a first access control list (ACL) and a second ACL, said steps comprising:

- identifying a first ordering of masks required for the first ACL;
- identifying a second ordering of masks required the second ACL;
- generating a matrix of the first and second orderings of masks, the matrix progressively identifying numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs; and
- traversing the matrix to identify a sequence of masks corresponding to a single ordering of masks including masks required for the first ACL and the second ACL, wherein the single ordering of masks maintains the first ordering and second orderings of masks with one or more masks corresponding to a different ACL or other feature in between one or more consecutive masks of the first and second ACLs.

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Claim 22 (currently amended): ~~The computer-readable medium~~
The apparatus of claim 21, wherein a last position identified by a last column and last row of the matrix identifies the number of different masks required for the single ordering of masks.

Claim 23 (currently amended): ~~The computer-readable medium~~
The apparatus of claim 21, wherein the matrix is traversed based on said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs.

Claim 24 (currently amended): ~~The computer-readable medium~~
The apparatus of claim 21, wherein said generating the matrix includes maintaining indications from where said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs are generated; and wherein the matrix is traversed based on said indications from where said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs are generated.

Claim 25 (currently amended): ~~The computer-readable medium~~
The apparatus of claim 21, wherein said steps comprise populating a plurality of block masks of an associative memory with said masks required for the first and second ACLs such that the single ordering of masks is produced in the associative memory.

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Claim 26 (original): An apparatus for identifying a combined ordering of masks corresponding to a first access control list (ACL) and a second ACL, the method comprising:

means for generating a matrix with a first axis corresponding to a first ordering of masks required for the first ACL and a second axis corresponding to a second ordering of masks required the second ACL, the matrix progressively identifying numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs; and

means for traversing the matrix to identify a sequence of masks corresponding to a single ordering of masks including masks required for the first ACL and the second ACL, wherein the single ordering of masks maintains the first ordering and second orderings of masks with one or more masks corresponding to a different ACL or other feature in between one or more consecutive masks of the first and second ACLs.

Claim 27 (original): The apparatus of claim 26, wherein a last position identified by a last column and last row of the matrix identifies the number of different masks required for the single ordering of masks.

Claim 28 (original): The apparatus of claim 26, wherein said means for traversing the matrix includes means for traversing the matrix based on said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs.

Claim 29 (original): The apparatus of claim 26, wherein said means for generating the matrix includes means for maintaining indications from where said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs are generated; and wherein said means for traversing the matrix includes means for traversing the matrix based on said indications from where said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs are generated.

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Claim 30 (original): The apparatus of claim 26, comprising means for populating a plurality of block masks of an associative memory with said masks required for the first and second ACLs such that the single ordering of masks is produced in the associative memory.